



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200
Fax (613) 632-5246

Purchasing Receipts

| PO No | Supplier | Line Item No | Rel No | Terms | Purchased Item | Description | For Part No | Equipment ID | Order Qty | Due Date | Received Quantity | Accounting Job No | Container No | Status | Receive Date | Price/Unit | Aging Days | Past Due | Total | Supplier Name |
|----------|-----------|--------------|--------|----------------|---------------------|--|-------------|--------------|-----------|------------|-------------------|-------------------|--------------|----------|--------------|----------------|------------|----------|------------|--------------------------|
| PO041784 | MCM001-VU | 1 | | 1 2% 10 Net 30 | RBE117-30001W3-5 | Strap Assembly | | | 4 | 11/23/2018 | 4 | | S131579 | Stock | 11/26/2018 | \$83.42 / Ea | 0 | | \$333.68 | McMaster-Carr Supply Co. |
| | | 2 | | | 20625A914 | Dial Indicator Aitchmnt Agd-2 Dial | | | 5 | | 5 | | S131311 | Stock | 11/26/2018 | \$6.63 / Ea | 0 | | \$33.15 | McMaster-Carr Supply Co. |
| | | 3 | | | 91259A583 | Shoulder Screw 5/16" Shoulder Dia, 1" L Shoulder, 1/4"-20 Thread | | | 10 | | 10 | | S131313 | Stock | 11/26/2018 | \$1.17 / Ea | 0 | | \$11.70 | McMaster-Carr Supply Co. |
| | | 4 | | | 5416K41 | SS Hose Clamp 3.5" Dia. receive ea | | | | | 10 | | S131315 | Stock | 11/26/2018 | \$1.54 / Ea | 0 | | \$15.36 | McMaster-Carr Supply Co. |
| | | 5 | | | AGD-2 | 1" Dial Indicator 0" to 1" Range | | | 2 | | 2 | | S131316 | Stock | 11/26/2018 | \$90.45 / Ea | 0 | | \$180.90 | McMaster-Carr Supply Co. |
| | | 6 | | | 09094-QADPC416 | Expandable Pin Assembly D4711-043 | | | 20 | | 20 | | S131304 | Inactive | 11/26/2018 | \$114.68 / pcs | 0 | | \$2,293.60 | McMaster-Carr Supply Co. |
| | | 10 | | | MT-O1-B-0.375X0.500 | Tool Steel Bar 0.375" X 0.500" | | | 6 | 11/28/2018 | 6 | | S131580 | Stock | 11/26/2018 | \$13.23 / ft | 0 | | \$79.36 | McMaster-Carr Supply Co. |
| | | 11 | | | 91249A146 | Screw, Stainless Steel | | | 100 | 11/23/2018 | 100 | | S131318 | Stock | 11/26/2018 | \$0.05 / pcs | 0 | | \$5.16 | McMaster-Carr Supply Co. |
| | | 12 | | | 91375A673 | Socket Head Set Screw 7/16-14 X 1.5 receive ea | | | 20 | | 20 | | S131320 | Stock | 11/26/2018 | \$0.92 / Ea | 0 | | \$18.44 | McMaster-Carr Supply Co. |
| | | 14 | | | 76475A92 | Low-Friction Surface-Protection Tape w/Teflon PTFE, Extra-Tough, 2" Wide x 0.022" Thick x 3' Long receive ea | | | 6 | | 6 | | S131321 | Stock | 11/26/2018 | \$12.97 / ft | 0 | | \$77.84 | McMaster-Carr Supply Co. |

| PO No | Supplier | Line Item No | Rel No | Terms | Purchased Item | Description | For Part No | Project | Equipment ID | Order Qty | Due Date | Received Quantity | Accounting Job No | Container No | Status | Receive Date | Price/Unit | Aging Days | Past Due | Total | Supplier Name |
|-------|----------|--------------|--------|-------|----------------|--|-------------|---------|--------------|---------------|------------|-------------------|-------------------|--------------|--------|--------------|---------------|------------|----------|-------------------|--------------------------|
| | | 15 | | | 90293A113 | Quick Release Pin 1/4" dia. x 1-1/2" Length | | | | 13 | | 13 | | S131322 | Stock | 11/26/2018 | \$ 20.57 / Ea | 0 | | \$267.41 | McMaster-Carr Supply Co. |
| | | 16 | | | 91257A662 | Steel Hex Head Screw 3/8"-24 x 2-3/4" Long | | | | 20 | | 20 | | S131323 | Stock | 11/26/2018 | \$ 0.83 / Ea | 0 | | \$16.60 | McMaster-Carr Supply Co. |
| | | 17 | | | 91735A146 | SS Pan Head Phillips Screw #6-32 x 3/8" Long | | | | 50 | | 50 | | S131324 | Stock | 11/26/2018 | \$ 0.10 / Ea | 0 | | \$5.02 | McMaster-Carr Supply Co. |
| | | 18 | | | 92865A221 | TBD | | | | 5 | | 5 | | S131325 | Stock | 11/26/2018 | \$ 2.35 / Ea | 0 | | \$11.76 | McMaster-Carr Supply Co. |
| | | 19 | | | 94744A240 | Flat Washer Zinc-Plated Steel Washer 1/4" Screw size 25/pack | | | | 25 | | 25 | | S131326 | Stock | 11/26/2018 | \$ 0.26 / Ea | 0 | | \$6.49 | McMaster-Carr Supply Co. |
| | | 20 | | | 94748A429 | SS Knob-Grip Push-Button Quick Release Pin 3/8" Dia. x 2-1/2" Long | | | | 4 | | 4 | | S131328 | Stock | 11/26/2018 | \$ 39.70 / Ea | 0 | | \$158.80 | McMaster-Carr Supply Co. |
| | | 21 | | | 94748A439 | SS Knob-Grip Push-Button Quick Release Pin 1/2" Dia. x 1" Long | | | | 1 | | 1 | | S131329 | Stock | 11/26/2018 | \$ 46.41 / Ea | 0 | | \$46.41 | McMaster-Carr Supply Co. |
| | | | 2 | | | | | | | 3 | 11/28/2018 | 3 | | S131581 | Stock | 11/26/2018 | \$ 46.41 / Ea | 0 | | \$139.23 | McMaster-Carr Supply Co. |
| | | | | | | | | | | Total: | | 304 | | | | | | | | \$3,700.91 | |



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041784**

Supplier: MCM001-VU
McMaster-Carr Supply Co,
P.O. Box 7690
Chicago, IL 60680-7690 USA
Phone: 330 995 5500
Fax: 330 995 9600

PO No: PO041784

PO Date: 11/20/18

Due Date: 11/23/18

**Purchase Order
Revision:**

Revision Date:

Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground

Pynt Terms: 2% 10 Net 30

Freight Terms:

Special Comments:

REVISED

Items

| Line Item | Job | Part | Supplier Part No | Description | Status | Account | Due Date | Order Quantity | Received Quantity | Balance | Unit Price (USD) | Extended Price |
|---|--------|------------------|------------------|--|------------------|---------|----------|----------------|-------------------|---------|------------------|----------------|
| 1 | | RBE117-30001W3-5 | 1/pk 3403T331 | Strap Assembly | Firmed - | | 11/23/18 | 4 Ea | 0 Ea | 4 Ea | \$83.42/Ea | \$333.68 |
| | | | | | 4 X NOV 26 2018 | | | | | | | |
| 2 | | 20625A914 | 1/pk | Dial Indicator Attchmnt Agd-2 Dial | Firmed - | | 11/23/18 | 5 Ea | 0 Ea | 5 Ea | \$6.63/Ea | \$33.15 |
| | | | | | 5 X NOV 26 2018 | | | | | | | |
| 3 | | 91259A583 | 1/pk | Shoulder Screw 5/16" Shoulder Dia, 1" L Shoulder, 1/4"-20 Thread | Firmed - | | 11/23/18 | 10 Ea | 0 Ea | 10 Ea | \$1.17/Ea | \$11.70 |
| | | | | | 10 X NOV 26 2018 | | | | | | | |
| 4 | | 5416K41 | 5/pk | SS Hose Clamp 3.5" Dia. receive ea | Firmed - | | 11/23/18 | 10 Ea | 0 Ea | 10 Ea | \$1.536/Ea | \$15.36 |
| | | | | | 10 X NOV 26 2018 | | | | | | | |
| 5 | | AGD-2 | 2092A42 1/pk | 1" Dial Indicator 0" to 1" Range | Firmed - | | 11/23/18 | 2 Ea | 0 Ea | 2 Ea | \$90.45/Ea | \$180.90 |
| | | | | | 2 X NOV 26 2018 | | | | | | | |
| 6 | | 09094-QADPC416 | 97787A661 | Expandable Pin Assembly D4711-043 | Firmed - | | 11/23/18 | 20 pcs | 0 pcs | 20 pcs | \$114.68/pcs | \$2,293.60 |
| | | | | | 20 X NOV 26 2018 | | | | | | | |
| Line Item Note as per dwg d4711 rev. d | | | | | | | | | | | | |
| 7 | 186441 | 21135A53 | | Plug Gauge | Firmed - | | 12/14/18 | 10 Ea | 0 Ea | 10 Ea | \$18.77/Ea | \$187.70 |
| | | | | receive ea | | | | | | | | |
| Line Item Note gauge pin size: .0540" dia | | | | | | | | | | | | |
| 8 | 186442 | 21135A54 | | Plug Gauge | Firmed - | | 12/6/18 | 10 Ea | 0 Ea | 10 Ea | \$13.05/Ea | \$130.50 |



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Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO041784**

| Items | | | | | | | | | | | | |
|---------------------------------------|-----|---------------------|------------------|--|----------|---------|-------------|----------------|-------------------|---------|------------------|----------------|
| Line Item | Job | Part | Supplier Part No | Description | Status | Account | Due Date | Order Quantity | Received Quantity | Balance | Unit Price (USD) | Extended Price |
| Line Item Note gauge pin size: .1440" | | | | | | | | | | | | |
| 10 | | MT-O1-B-0.375X0.500 | 9516K101 6 ft | Tool Steel Bar 0.375" X 0.500" | Firmed - | | 11/28/18 | 6 ft | 0 ft | 6 ft | \$13.22666/ft | \$79.36 |
| | | | | | | 65 X | NOV 26 2018 | | | | | |
| 11 | | 91249A146 | 100/pk | Screw, Stainless Steel | Firmed - | | 11/23/18 | 100 pcs | 0 pcs | 100 pcs | \$0.0516/pcs | \$5.16 |
| | | | | | | 100 X | NOV 26 2018 | | | | | |
| 12 | | 91375A673 | 10/pk | Socket Head Set Screw 7/16-14 X 1.5 receive ea | Firmed - | | 11/23/18 | 20 Ea | 0 Ea | 20 Ea | \$0.922/Ea | \$18.44 |
| | | | | | | 20 X | NOV 26 2018 | | | | | |
| 14 | | 76475A92 | 3 ft long | Low-Friction Surface-Protection Tape w/Teflon PTFE, Extra-Tough, 2" Wide x 0.022" Thick x 3' Long receive ea | Firmed - | | 11/23/18 | 6 ft | 0 ft | 6 ft | \$12.973333/ft | \$77.84 |
| | | | | | | 65 X | NOV 26 2018 | | | | | |
| 15 | | 90293A113 | 1/pk | Quick Release Pin 1/4" dia. , 1-1/2" Length | Firmed - | | 11/23/18 | 13 Ea | 0 Ea | 13 Ea | \$20.57/Ea | \$267.41 |
| | | | | | | 13 X | NOV 26 2018 | | | | | |
| 16 | | 91257A662 | 10/pk | Steel Hex Head Screw 3/8"-24 x 2-3/4" Long | Firmed - | | 11/23/18 | 20 Ea | 0 Ea | 20 Ea | \$0.83/Ea | \$16.60 |
| | | | | | | 20 X | NOV 26 2018 | | | | | |
| 17 | | 91735A146 | 50/pk | SS Pan Head Phillips Screw #6-32 x 3/8" Long | Firmed - | | 11/23/18 | 50 Ea | 0 Ea | 50 Ea | \$0.1004/Ea | \$5.02 |
| | | | | | | 50 X | NOV 26 2018 | | | | | |
| 18 | | 92865A221 | 5/pk | TBD | Firmed - | | 11/23/18 | 5 Ea | 0 Ea | 5 Ea | \$2.352/Ea | \$11.76 |
| | | | | | | 5 X | NOV 26 2018 | | | | | |
| 19 | | 94744A240 | 25/pk | Flat Washer Zinc-Plated Steel Washer 1/4" Screw size 25/pack | Firmed - | | 11/23/18 | 25 Ea | 0 Ea | 25 Ea | \$0.2596/Ea | \$6.49 |
| | | | | | | 25 X | NOV 26 2018 | | | | | |



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada
Tel (613) 632-5200

PURCHASE ORDER

PO041784

Items

| Line Item | Job | Part | Supplier Part No | Description | Status | Account | Due Date | Order Quantity | Received Quantity | Balance | Unit Price (USD) | Extended Price |
|------------|-----|-----------|------------------|--|--------|---------|-------------|----------------|-------------------|---------|------------------|----------------|
| 20 | | 94748A429 | 1/pk | SS Knob-Grip Push-Button Quick Release Pin 3/8" Dia. x 2-1/2" Long | Firmed | - | 11/23/18 | 4 Ea | 0 Ea | 4 Ea | \$39.70/Ea | \$158.80 |
| | | | | | | 4x | NOV 26 2018 | | | | | |
| 21 | | 94748A439 | 1/pk | SS Knob-Grip Push-Button Quick Release Pin 1/2" Dia. x 1" Long | Firmed | - | 11/23/18 | 1 Ea | 0 Ea | 1 Ea | \$46.41/Ea | \$46.41 |
| | | | | | | 1x | NOV 26 2018 | | | | | |
| | | | | | Firmed | - | 11/28/18 | 3 Ea | 0 Ea | 3 Ea | \$46.41/Ea | \$139.23 |
| Sub Total: | | | | | | | | 4 | 0 | 4 | | \$185.64 |

Grand Total: \$4,019.11

Order Notes

Procurement Quality Clauses
A005 RIGHT OF ENTRY
A016 PERSONNEL QUALIFICATION
A026 CERTIFICATION OF MATERIAL CONFORMANCE
A032 DOCUMENT SPECIAL REQUIREMENTS
A033 STATEMENT OF CONFORMITY/TEST RECORDS FOR NAS, AN and MS FASTENERS
A040 NOTIFICATION OF QUALITY ESCAPE
A041 QUALITY MANAGEMENT SYSTEM
A042 DART NOTIFICATION BY SUPPLIER
A043 RETENTION OF QUALITY DOCUMENTS

A048 COUNTERFEIT PARTS AVOIDANCE, DETECTION, MITIGATION AND DISPOSITION PROGRAM
A049 SUPPLIER AWARENESS

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 11/26/18 9:01 AM dart.lavoie.chantal

200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO041784

Order Placed By
Chantal Lavoie

McMaster-Carr Number
4390621-02

Page 1 of 2

11/21/2018

| Line | Product | Ordered | Shipped |
|------|--|-----------|---------|
| 1 | 3403T331 Nylon Web Sling with Choker Fittings, 2475 lbs. Choker Capacity, 5 Feet Long | 4 Each | 4 ✓ |
| 21 | 94748A439 Knob-Grip Push-Button Quick-Release Pin with Lanyard, 3/8" Diameter, 3-1/2" Usable Length | 4 Each | 3 ✓ |

Shipped separately from our Cleveland warehouse on 11/21

| | | | |
|----|---|------------|----|
| 2 | 20625A914 Mitutoyo Model 101039 Flat Back for Plunger-Style Variance Indicator | 5 Each | 5 |
| 3 | 91259A583 Alloy Steel Shoulder Screw, 5/16" Shoulder Diameter, 1" Shoulder Length, 1/4"-20 Thread | 10 Each | 10 |
| 4 | 5416K41 Worm-Drive Clamps for Firm Hose and Tube with 410 Stainless Steel Screw, 1/2" Band Width, 3-1/16" to 4" Clamp ID | 2 Packs | 2 |
| 5 | 2092A42 Plunger-Style Variance Indicator, Plus/Minus Dial, Plain, 0" to 1" Range, AGD Group 2 | 2 Each | 2 |
| 6 | 97787A661 Expanding Diameter Quick-Release Pin, 1/4" Diameter, 1" Usable Length | 20 Each | 20 |
| 9 | 8893K239 Tight-Tolerance Multipurpose O1 Tool Steel Rod, 0.3750" Diameter, 6 Feet Long | 1 Each | 1 |
| 11 | 91249A146 Black-Oxide 18-8 Stainless Steel Pan Head Phillips Screws, 6-32 Thread, 3/8" Long | 1 Pack | 1 |
| 12 | 91375A673 Alloy Steel Cup-Point Set Screw, Black Oxide, 7/16"-14 Thread, 1-1/2" Long | 2 Packs | 2 |
| 13 | 48925K93 Standard-Wall Unthreaded PVC Pipe for Water, 1 Pipe Size, 5 Feet Long | 3 Each | 3 |
| 14 | 76475A92 Low-Friction Tape Made with Teflon PTFE, Heavy Duty, 2" Wide, 3 Feet Long, 0.022" Overall Thickness | 2 Each | 2 |
| 15 | 90293A113 T-Handle Push-Button Quick-Release Pin, 1/4" Diameter, 1-1/2" Usable Length | 13 Each | 13 |
| 16 | 91257A662 Zinc Yellow-Chromate Plated Hex Head Screw, Grade 8 Steel, 3/8"-24 Thread Size, 2-3/4" Long | 2 Packs | 2 |

Packing List

200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO041784
Order Placed By
Chantal Lavoie

McMaster-Carr Number
4390621-02

Page 2 of 2

11/21/2018

| Line | Description | Ordered | Shipped |
|------------------|--|------------|------------------|
| 17 | 91735A146 316 Stainless Steel Pan Head Phillips Screw, Super-Corrosion-Resistant, 6-32 Thread Size, 3/8" Long | 1 Pack | 1 |
| 18 | 92865A221 Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 3/8"-24 Thread Size, 2" Long, Fully Threaded | 1 Pack | 1 |
| 19 | 94744A240 Zinc-Plated Steel Washer for Soft Material, 1/4" Screw Size, Narrow ASME Designation | 1 Pack | 1 |
| 20 | 94748A429 Knob-Grip Push-Button Quick-Release Pin with Lanyard, 3/8" Diameter, 2-1/2" Usable Length | 4 Each | 4 |
| 21 | 94748A439 Knob-Grip Push-Button Quick-Release Pin with Lanyard, 3/8" Diameter, 3-1/2" Usable Length | 4 Each | 1 |
| <hr/> | | | |
| Expected to ship | | | |
| 7 | 21135A53 Class X Plug Gauge, No-Go, 0.054" Size | 10 Each | 10 Nov 27-Dec 13 |
| 8 | 21135A54 Class X Plug No-Go Gauge, Size=.1440 | 10 Each | 10 Nov 27-Dec 5 |

200 Aurora Industrial Pkwy
Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

Dart Aerospace Ltd
1270 Aberdeen St
Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO041784

Order Placed By
Chantal Lavoie

McMaster-Carr Number
4390621-01

Page 1 of 2

11/21/2018

| Line | Product | Ordered | Shipped |
|------|--|-----------|---------|
| 10 | 9516K101 Tight-Tolerance Multipurpose O1 Tool Steel Bar, 3/8" Thick, 1/2" Wide, 6 Feet Long | 1 Each | 1 ✓ |

Shipped separately from our Cleveland warehouse on 11/21

| | | | |
|----|---|------------|----|
| 2 | 20625A914 Mitutoyo Model 101039 Flat Back for Plunger-Style Variance Indicator | 5 Each | 5 |
| 3 | 91259A583 Alloy Steel Shoulder Screw, 5/16" Shoulder Diameter, 1" Shoulder Length, 1/4"-20 Thread | 10 Each | 10 |
| 4 | 5416K41 Worm-Drive Clamps for Firm Hose and Tube with 410 Stainless Steel Screw, 1/2" Band Width, 3-1/16" to 4" Clamp ID | 2 Packs | 2 |
| 5 | 2092A42 Plunger-Style Variance Indicator, Plus/Minus Dial, Plain, 0" to 1" Range, AGD Group 2 | 2 Each | 2 |
| 6 | 97787A661 Expanding Diameter Quick-Release Pin, 1/4" Diameter, 1" Usable Length | 20 Each | 20 |
| 9 | 8893K239 Tight-Tolerance Multipurpose O1 Tool Steel Rod, 0.3750" Diameter, 6 Feet Long | 1 Each | 1 |
| 11 | 91249A146 Black-Oxide 18-8 Stainless Steel Pan Head Phillips Screws, 6-32 Thread, 3/8" Long | 1 Pack | 1 |
| 12 | 91375A673 Alloy Steel Cup-Point Set Screw, Black Oxide, 7/16"-14 Thread, 1-1/2" Long | 2 Packs | 2 |
| 13 | 48925K93 Standard-Wall Unthreaded PVC Pipe for Water, 1 Pipe Size, 5 Feet Long | 3 Each | 3 |
| 14 | 76475A92 Low-Friction Tape Made with Teflon PTFE, Heavy Duty, 2" Wide, 3 Feet Long, 0.022" Overall Thickness | 2 Each | 2 |
| 15 | 90293A113 T-Handle Push-Button Quick-Release Pin, 1/4" Diameter, 1-1/2" Usable Length | 13 Each | 13 |
| 16 | 91257A662 Zinc Yellow-Chromate Plated Hex Head Screw, Grade 8 Steel, 3/8"-24 Thread Size, 2-3/4" Long | 2 Packs | 2 |

Packing List

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Aurora OH 44202-8087
330-995-5500
cle.sales@mcmaster.com

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Hawkesbury ON K6A 1K7
Canada

Purchase Order
PO041784

Order Placed By
Chantal Lavoie

McMaster-Carr Number
4390621-01

Page 2 of 2

11/21/2018

| Line | Description | Ordered | Shipped |
|------------------|--|------------|------------------|
| 17 | 91735A146 316 Stainless Steel Pan Head Phillips Screw, Super-Corrosion-Resistant, 6-32 Thread Size, 3/8" Long | 1 Pack | 1 |
| 18 | 92865A221 Medium-Strength Grade 5 Steel Hex Head Screw, Zinc-Plated, 3/8"-24 Thread Size, 2" Long, Fully Threaded | 1 Pack | 1 |
| 19 | 94744A240 Zinc-Plated Steel Washer for Soft Material, 1/4" Screw Size, Narrow ASME Designation | 1 Pack | 1 |
| 20 | 94748A429 Knob-Grip Push-Button Quick-Release Pin with Lanyard, 3/8" Diameter, 2-1/2" Usable Length | 4 Each | 4 |
| 21 | 94748A439 Knob-Grip Push-Button Quick-Release Pin with Lanyard, 3/8" Diameter, 3-1/2" Usable Length | 4 Each | 1 |
| <hr/> | | | |
| Expected to ship | | | |
| 7 | 21135A53 Class X Plug Gauge, No-Go, 0.054" Size | 10 Each | 10 Nov 27-Dec 13 |
| 8 | 21135A54 Class X Plug No-Go Gauge, Size=.1440 | 10 Each | 10 Nov 27-Dec 5 |

McMASTER-CARR®

Tight-Tolerance Multipurpose O1 Tool Steel Bar 3/8" Thick, 1/2" Wide

9516K101



| | |
|---------------------------------------|----------------------|
| Material | O1 Tool Steel |
| Cross Section Shape | Rectangle |
| Construction | Solid |
| Appearance | Plain |
| Thickness | 3/8" |
| Thickness Tolerance | -0.001" to 0.001" |
| Tolerance Rating | Tight |
| Width | 1/2" |
| Width Tolerance | 0" to 0.005" |
| Yield Strength | 50,000 psi |
| Temper Rating | Not Rated |
| Hardness | Rockwell B85 |
| Hardness Rating | Medium |
| Heat Treatable | Yes |
| Maximum Hardness after Heat Treatment | Rockwell C65 |
| Mechanical Finish | Precision Ground |
| Temperature Range | Not Rated |
| Specifications Met | ASTM A681 |
| Flatness Tolerance | Not Rated |
| Density | 0.28 lbs./cu. in. |
| Coefficient of Thermal Expansion | 7.1×10^{-6} |
| Elongation | 25% |
| Material Composition | |
| Iron | 94.79-96.95% |
| Carbon | 0.85-1.05% |
| Chromium | 0.40-0.70% |

| | |
|---------------------------|---|
| Manganese | 1.00-1.40% |
| Nitrogen | 0.40-0.60% |
| Phosphorus | 0-0.030% |
| Silicon | 0-0.50% |
| Sulfur | 0-0.030% |
| Tungsten | 0.40-0.60% |
| Vanadium | 0-0.30% |
| Length | 1 1/2 ft., 3 ft., 6 ft. |
| Additional Specifications | Guidelines for Heat Treating Tool Steel |

These precision-ground sheets and bars have a tight thickness tolerance of ± 0.001 " (± 0.05 mm). Commonly used for dies, punches, and gauges, O1 tool steel is an oil-hardening material that resists wear and abrasion. Sheets and bars are also known as flat stock.

SPECIFICATION CONTROL DRAWING


PURCHASE MATERIAL: AISI O1 TOOL STEEL BAR

SPECIFICATION: DIN 1.2510 or B.S. BO 1 or
SAE J437 or SAE J438
or UNS T31501 or ASTM A681

PART NUMBER: MT-O1-B-[H.HHH]x[W.WWW]
WHERE "H.HHH" = HEIGHT IN INCHES
WHERE "W.WWW" = WIDTH IN INCHES

EG. 4"x6" BAR = MT-O1-B-4.000x6.000

TOLERANCES PER MANUFACTURER SPECIFICATIONS

| | | | |
|---|---|-------------------------------|-------|
|  | | AISI O1 TOOL STEEL BAR | |
| DESIGNED BY: VM 03/2017 DRAWN BY: SAC 08/07/2017 CHECKED BY: VM 08/07/2017 DATE: 03/08/2017 APPROVED BY: VM 09/12/2017 DATE: 07/2017 | XXX 1 255 FRACTIONS 1/32 XX 1/4 X 1/2 1/8 3/16 1/4 3/8 1/2 5/8 3/4 7/8 1 | MT-O1-B | REV A |
| THIS DRAWING IS A PROPERTY OF PART AEROSPACE LTD. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF PART AEROSPACE LTD. | | | |

EN 17-1-19

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-01-B-0.375x6.500

PO / BATCH NO.: P0041784/S131580

DATE: 18/11/26

MATERIAL CERT REC'D: Yes
 QUANTITY RECEIVED: 64
 QUANTITY INSPECTED: 64
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 0.375"
 THICKNESS RECEIVED: 0.375"
 SHEET SIZE ORDERED: —
 SHEET SIZE RECEIVED: —

| DESCRIPTION | NCR (Check Y/N) | COMMENTS |
|--|--------------------------------------|------------------|
| SURFACE DAMAGE | Y <input checked="" type="radio"/> N | |
| CORRECT FINISH | <input checked="" type="radio"/> Y N | |
| CORROSION | Y <input checked="" type="radio"/> N | |
| CORRECT GRAIN DIRECTION | <input checked="" type="radio"/> Y N | |
| CORRECT MATERIAL PER M-DRAWING | <input checked="" type="radio"/> Y N | <u>ASTM A681</u> |
| CORRECT THICKNESS | <input checked="" type="radio"/> Y N | |
| PHOTO REQUIRED | Y <input checked="" type="radio"/> N | |
| CORRECT REF # TO LINK CERT | <input checked="" type="radio"/> Y N | <u>P0041784</u> |
| CORRECT MATERIAL IDENTIFICATION | <input checked="" type="radio"/> Y N | |
| CORRECT M# ON THE MATERIAL | <input checked="" type="radio"/> Y N | |
| DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF | Y <input checked="" type="radio"/> N | |
| DOES THIS REQUIRE AN EXTRUSION REPORT | Y <input checked="" type="radio"/> N | |

| CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW | | | | | |
|--|-----|-----|-------|-------|---------|
| | HRC | HRB | DUR A | DUR D | WEBSTER |
| TYPE OF MATERIAL | | | | | |
| SIZE OF TEST SAMPLE | | | | | |
| HARDNESS / DUROMETER READING | | | | | |

testers located in the Quality Office

| | | | |
|--|----------------------|-----------------------------------|--|
| QC 18 INSPECTION | | ENGINEERING SIGNOFF (if required) | |
| INSPECTED BY: <u>61</u> <u>9-89</u> | SIGNED OFF BY: _____ | | |
| DATE: <u>18/11/26</u> | DATE: _____ | | |

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in